

110. Sustainable knowledge

Abstract

Western society sees knowledge as *the* way to solve its problems. Despite the often-ambivalent results of this commitment, faith in knowledge remains strong. But does an essentially *laissez faire* approach to knowledge production fit the challenges of the 21st century? The role of knowledge in society is changing. There is growing evidence that our commitment to endless knowledge is leading society down a dangerous path, and leading us away from the goal of creating a sustainable society. It is time to add to the three elements of sustainability, cultural, economic, and ecological, a fourth factor: epistemic sustainability. Economic development, environmental protection, and societal well-being needs to be complemented by conversations on limiting knowledge production. The idea of epistemic sustainability reflects the fact that society now suffers from both the under- and overproduction of knowledge.

Keywords

Modernity; Environment; Cultural lag; Sustainability; University; AI

Introduction

Western society – in fact every culture today, with rare exceptions like the Amish – sees knowledge (as compared with self-control, solidarity, or prayer) as the privileged way to solve problems. The knowledge pursued is overwhelmingly scientific and technological in nature, although it can also consist of insights from the social sciences and on rare occasions the humanities. Whatever the topic – economic development or healthcare, social inequality or environmental degradation – knowledge is the means for curing what ails us.

This commitment to knowledge has brought ambivalent results. There is no question that it has led to tremendous advances in human well-being. But it has also damaged the environment and been the means for sacrificing millions on the altar of progress: think, for instance, of the depredations of the industrial revolution. Nonetheless, this faith remains

strong. When knowledge causes problems (workers rendered redundant by new technologies, climate change caused by fossil fuels) the solutions proposed almost always consist in a call for more knowledge (retrain the workers in new fields, develop carbon capture and sequestration). Progress comes not from self-restraint but from epistemic advance.

As Heidegger noted (see his essay on technology), modern knowledge is fundamentally instrumental in nature. Knowledge production is libertarian: it is turned over to society to use as it wishes, where it becomes the means for privately determined ends. This is why Clark Kerr, President of the University of California system, described the modern university as a multiversity: he was pointing to the fragmentation of contemporary knowledge, which lacks a sense of common purpose (Kerr, 1963).

Are these assumptions concerning knowledge still a good idea? Knowledge production remains essentially *laissez faire*: tied to capitalism, it provides an unending series of products and innovations. Some of these innovations (artificial intelligence, genetic engineering and gain of function research) now raise existential questions.

One token of this is the creation of centers devoted to studying the various ways knowledge could lead to our destruction (e.g., The Centre for Existential Risk at Cambridge University, the Harvard-MIT Project on X-Risk). One would think that the existence of such centers would suggest that something has gone wrong. When half of surveyed AI scientists believe that there was at least a 10% chance that humanity will be destroyed by AI, things have gone off the rails (Harari et al., 2023).

Aristotle argued that virtue would be found in hitting the mean between excess and deficit. Notably, he applied the doctrine of the mean only to the moral virtues, not the intellectual virtues. But should there also be a mean to knowledge? Is it possible to have too much of it as well as too little?

The place of knowledge in society has changed. To the three elements of sustainability, cultural, economic, and ecological, it is time to add a fourth: epistemic sustainability (Frodeman, 2014). The idea of sustainability implies the recognition of limit; economic development, environmental protection, and societal well-being now need to be com-

plemented by placing a limit to knowledge production.

The idea of epistemic sustainability reflects the fact that society today suffers from both the under- and overproduction of knowledge. Let us continue to e.g., pursue a cure for Alzheimer's. But let us also ask questions about the dangers of the fragmentation of knowledge, the possibilities of existential risk, and the trivialization of our lives.

Interdisciplinarity and limit

Every culture is a knowledge culture. This is implied in the very concept, as compared with behaviors that are instinctual in nature. What distinguishes modern western society and now world culture is its uncritical commitment to endless knowledge production. Insight is tacitly viewed as an infinite process – tacitly, for the virtues of this approach are seen as too obvious to require justification.

This assumption is comparatively recent in age. In the past, people were wary of *libido sciendi*, the lust to know, an attitude that is still present in the stories of Icarus, Pandora, Faust, and Frankenstein. As Roger Shattuck (1997) details, this older view was common wisdom for millennia. Immanuel Kant summarizes the new spirit of the modern age when he cites Horace's phrase *sapere aude!* – dare to know! In recent years this view has even become dominant across the humanities, in the rejection of the idea of a canon and an emphasis upon constant innovation.

Since the 1970s, academia has become increasingly self-conscious in its approach to knowledge (e.g., OECD, 1972). Much of the discussion has been framed in terms of interdisciplinary and transdisciplinary approaches to knowledge. The goal of these efforts has been to find more efficient and effective approaches to knowledge production and dissemination as compared with standard (i.e., disciplinary) approaches. What has not been considered was that knowledge itself may have become a problem.

The issue can be framed in terms of sustainability. Various efforts toward sustainability share one characteristic: they all involve the recognition of the limits to things. Social sustainability requires that we consider the phenomenon of cultural lag, that there are limits to the capacity of people to adapt to new conditions. Economic sustainability recognizes there are limits to the natural resources being

drawn upon and to the amount of pollution the environment can tolerate. But while interdisciplinarity has become commonplace, it is rarely recognized that its pursuit implies the notion of limit.

This is true in terms of both the supply of and the demand for knowledge. On the supply side, there is only so much that an individual can comprehend even with the help of others. Once this limit is reached the knowledge enterprise falls back into multi-disciplinarity, with each person in charge of a domain and no one with a sense of the whole: interdisciplinarity defeated. On the demand side, people across society who seek help with their problems come to knowledge workers with specific needs in mind. They have limited time and attention, and will quickly turn elsewhere if these needs aren't being met. This is a problem that transdisciplinarity rarely discusses.

Taken too far, knowledge breeds incoherence (because no one can master more than a corner of knowledge), technocracy (the increasing need to defer to experts), and social gridlock (via the deferral of hard decisions, out of the often-spurious sense that new knowledge will offer a technological fix or will provide sufficiently clear evidence to compel consensus). Additional knowledge does not always clarify matters, for it can also reveal complexities that make decision-making more difficult (Sarewitz, 2004). What's more, knowledge production not only raises perplexities and dangers; it also underpins trivial innovations, prompting the growth of consumerism and the pillaging of the environment.

The research university, transhumanism, and sustainable knowledge

The infinite pursuit of knowledge is built into the disciplinary structure of the modern university. Knowledge is divided into a set of regional ontologies, each of which perpetuates itself through the pursuit of new specialized knowledge. Restricting each subject to its own region of being – including philosophy, theology, and the rest of the humanities, which once had sought to offer a view of the whole – has another effect: no one is responsible for considering the overall purpose or consequences of these epistemic

efforts. Some will reply that this is the responsibility of president and university hierarchy. But their work is mostly administrative rather than speculative in nature.

Within the modern university, the lack of an end in the sense of a limit to knowledge is a consequence of the lack of an end in the sense of there being no overall purpose to knowledge. 150 years after the institutional creation of the research university – the American institutionalization of research university culture (1876), first launched by the University of Berlin in 1810 – this structure remains intact.

The rationale for these continued efforts seems self-evident: to grow the economy, conquer disease, address environmental problems, and satisfy a myriad of other challenges faced by society. To state such goals in a piecemeal fashion, as both researchers and the public do, makes the point self-evident. We want vaccines to end pandemics, new, cleaner sources of energy, and more efficient transportation. The list is as endless as are our desires.

But what do these various efforts add up to? Housed within disciplines, researchers pursue knowledge of one type or another; but where does this piecemeal process take us when considered as a whole?

The movement known as transhumanism offers an answer to this question. Transhumanists (e.g., Ray Kurzweil, Aubrey de Grey, Steve Fuller) have thought about the entirety of the knowledge enterprise, asking about the implicit end of all this activity. Their conclusion is that science and technology are moving us toward a condition of infinite human power. Where else could the infinite pursuit of knowledge end except in the creation of infinite capacities? Transhumanists differ on the particularities of how this process will be achieved – perhaps through the physical and cognitive augmentation of our simian bodies, perhaps through a silicon future, as artificial intelligence comes to either serve, blend with, or absorb us. But by whichever means, they see the end of the process as clear: deification.

Transhumanism is not all that well known, and when it does gain attention, it is often dismissed as the preoccupation of a few oddballs. This is despite the fact that prominent companies in Silicon Valley and elsewhere have put billions into research on life extension and artificial intelligence. But more to

the point, transhumanists have exposed the tacit goal of modern culture. Our culture's pursuit of infinite knowledge is tacitly transhumanist in orientation. Transhumanists have made explicit the logical endpoint of the Enlightenment project (Frodeman, 2019).

Once attuned to this, the transhumanist impulse can be seen everywhere. The US National Science Foundation places no limit on its program of scientific and technological advance, just as the US National Institutes of Health hope to overcome every infirmity. The same is true for every other nation's path of research. The only difference between the transhumanists and the rest of us is in the degree of self-awareness of where things are trending. Our epistemic trajectory points toward infinite power; transhumanists have simply made the point explicit.

Transhumanists deserve praise for taking a global view of our situation. But this clarity raises questions, the most basic of which is whether the goal of infinite power is a desirable one and whether it is likely to succeed. Older sources of wisdom in our culture thought the pursuit of infinite knowledge led to situations like the Sorcerer's Apprentice, where technology mastered us rather than the other way around. Doubtless, the continued pursuit of knowledge will lead to any number of improvements. But as our knowledge increases so does our power, which can be used in both beneficial and destructive ways.

Technological advance threatens us in four ways: by causing social instability, as society is unable to successfully adapt to new technologies; through the rise of totalitarianism, as advances place the means for surveilling, manipulating, and controlling the population in the hands of governments; and by causing social or environmental disruption, via either a catastrophic accident or the intentional actions of rogue actors.

Then there is the fourth threat, less existential but more insidious: the reduction of our lives to play and entertainment. Knowledge production draws no distinction between the pressing needs that have been addressed (e.g., sanitation, striking advances in medicine, and adequate food production) versus the satisfaction of peripheral desires (larger homes, a new app). Nor do we distinguish between developed countries, where the requirements for a satisfactory life have been largely met, versus the situation in those parts of the world that are still lacking basic services.

If knowledge is to have a governor or ruling principle that checks its pursuit, it's clear what that principle should be. We should ask, will the proposed research contribute to the goal of creating a sustainable society? At the least, will its results be neutral to this goal? Sustainability raises its own issues, for sustainability should not only ask whether an existing situation is viable over the long term. It should also ask whether an activity or way of life is worth sustaining. The study of sustainability commonly terms a science: it is framed in terms of the insights of engineering and the natural and social sciences. But ultimately it is a matter of philosophy: what type of life is worth living? Today that question should include, does knowledge always contribute to the goal of living a good life?

Some say such a conversation is impossible. "China or other countries won't stop research; neither will private industry". But laws concerning murder do have an effect. If agencies such as the US National Science Foundation added another element to its

review criteria – does this research help move us toward a more sustainable society? – it would encourage a self-consciousness that is currently lacking.

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